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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,521	11/21/2003	Yukihisa Takeuchi	789_120	3363

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EXAMINER	
TRAN, THUY V	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/719,521	TAKEUCHI ET AL.	
	Examiner	Art Unit	
	Thuy V. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment filed 06/24/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8,9 and 11-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,5,9 and 13* is/are allowed.

6)☒ Claim(s) *1-3,8,11 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/10/05; 8/22/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is a response to the Applicants' amendment filed on 06/24/2005. In view of this amendment, claims 6-7 and 10 are canceled; and thus, claims 1-5, 8-9, and 11-13 are now presented in the instant application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 8, and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kano et al. (U.S. Patent No. 6,198,225).

With respect to claims 1 and 3, Kano et al. discloses, in Fig. 19, an electronic pulse generation device comprising (1) an emitter element [310] made of a dielectric material or anti-ferroelectric material, (2) first and second electrodes [304, 320] formed in contact with the emitter element, and (3) means for applying alternating pulse between the first and second electrodes [304, 320] to reverse or change of polarization of the emitter element (see col. 28, lines 16-45), wherein electrons are emitted intermittently from the emitter element (due to pulse applied).

With respect to claim 2, Kano et al. discloses that the device further comprises a third electrode [340] facing the emitter element, and means for applying positive direct bias voltage (which is [d.c.]; see Fig. 19) to the third electrode [340], wherein a vacuum space (see Fig. 19) is

present between the emitter element and the third electrode [340], and electrons are emitted intermittently from the emitter element toward the third electrode [340] (see Fig. 19).

With respect to claim 8, Fig. 18 of Kano et al. shows that the first electrode [304] is formed on a first surface [316] of the emitter element [310], and the second electrode [320] is formed on a second surface of the emitter element.

With respect to claim 11, Kano et al. discloses, in Fig. 19, that the alternating pulse is applied between the first electrode [304] and the second electrode [320] for causing the first electrode to have a potential lower than a potential of the second electrode to reverse or change polarization of at least a portion of the emitter element, and the polarization reversal or polarization change induces emission of electrons in the vicinity of the first electrode [304].

With respect to claim 12, Fig. 19 of Kano et al. shows that the alternating pulse is applied between the first electrode [304] and the second electrode [320] to reverse or change polarization of at least a portion of the emitter element, wherein the polarization reversal or polarization change causes positive poles of dipole moments in the vicinity of the first electrode [304] to be oriented toward the first electrode [304] inducing emission of primary electrons from the first electrode, and the emitted primary electrons impinge upon the emitter element to induce emission of secondary electrons from the emitter element (see col. 28, lines 16-51).

Allowable Subject Matter

3. Claims 4-7, 9-10, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- An electric pulse generating device wherein the means for applying alternating pulse applies a first voltage between the first electrode and the second electrode for causing the first electrode to have a potential higher than a potential of the second electrode in a first period to perform the polarization of the emitter element in one direction, and the means for applying alternating pulse applies a second voltage between the first electrode and the second electrode for causing the first electrode to have a potential lower than a potential of the second electrode in a second period to perform the polarization reversal or polarization change of the emitter element for emitting electrons, in combination with the remaining claimed limitations as called for in independent claim 4;
- An electronic pulse generating device wherein the first electrode and the second electrode are disposed in contact with a principal surface of the emitter element, with a slit defined between the first electrode and the second electrode, the emitter element being partly exposed through the slit, in combination with the remaining claimed limitations as called for in independent claim 5;
- An electronic pulse generating device wherein polarization reversal or polarization change occurs in an electric field E applied to the emitter element represented by Vak/h, where h is a thickness of the emitter element between the first electrode and the second electrode, and Vak is a voltage between the first and second electrodes, in combination with the remaining claimed limitations as called for in independent claim 9; and

- An electronic pulse generating device wherein the first electrode, the emitter element, and a vacuum atmosphere define a triple point, in combination with the remaining claimed limitations as called for in independent claim 13.

Remarks and conclusion

5. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

09/06/2005

THUY V. TRAN
PRIMARY EXAMINER